VFR TERMINAL AREA CHART

HOUSTON

VFR FLYWAY — HOUSTON

Airport Having Control Tower (Airport Traffic Area) are shown in blue, all others in magenta. Consult Airport/Facility Directory (A/FD) for airport marking, lighting, communication aids, and services. For additional detailed information, refer to the Chart User's Guide.

AIRPORTS

Other than hard-surfaced runway(s)

Hard-surfaced runways 1500 ft or greater

Seaplane Base (SPB)

All recognizable hard-surfaced runways, including those closed are shown for visual identification.

ADDITIONAL AIRPORT INFORMATION

Private (Pvt) Non-public use having emergency or landmark value.

Military Other than hard-surfaced. All military airports are identified by abbreviations AFB, NAS, AAF, etc. For complete airport information consult DOD FLIP.

Heliport Lighted — Abandoned — point having landmark value — Ultralight Flight Park Selected

Services Fuel available and field attended during normal working hours depicted by use of ticks around basic airport symbol. Consult A/FD for service availability at airports with hard-surfaced runways 1500 ft or greater.

☆ Rotating light in operation Sunset to Sunrise

AIRPORT DATA

Box indicates Space-control Traffic Area (See FAR 93)

NAN CT 118.3 ATIS 124.9 — Indicates Flight Service Station on field

03 L 92 12245 — UNICOM

VFR Advy 125.3 — Airport of entry

FSS Flight Service Station

CT Control Tower (CT) - primary frequency

• Star indicates operation part time. See tower frequencies tabulation for hours of operation.

Indicates Common Traffic Advisory Frequencies (CTAF)

UNICOM Aeronautical advisory station

VFR Advsy VFR Advisory Service shown where ATIS not available and frequency is other than primary CT frequency.

03 Elevation in feet.

L Lighting in operation Sunset to Sunrise.

*L Lighting available on request, part time lighting, or pilot-controlled lighting.

92 Length of longest runway in hundreds of feet. Visible length may be less.

When facility or information is lacking, the respective character is replaced by a dash. All lighting codes refer to runway lights; lighted runways may not be the longest or lighted full length. All times are local.

ARTCT Non-Federal Control Tower

RADIO AIDS TO NAVIGATION AND COMMUNICATION BOXES

VHF OMNI RANGE (VOR) — 122.1R 122.6 123.8

VORTAC

VOR DME

Non-Directional Radiobeacon

Marine Radiobeacon

Other facilities, i.e., Commercial Broadcast Stations, FSS, Outlers, etc., as necessary.

GARLAND 118.8 GAR — Underline indicates no voice on this freq.

Slashes indicates TWEB, AWOS or HIWAS available on this NAVAID.

R receive only

T transmit only

MIAMI Controlling FSS

CHICAGO CHI 122.1R — Heavy line box indicates Flight Service Station (FSS). Freqs 121.5, 122.2, 243.0 and 255.4 are normally available at all FSSs and are not shown above boxes. All other freqs are shown.

For Airport Advisory Service use FSS freq 123.6

In Canada all available FSS frequencies are shown.

Frequencies above thin line box are remoted to NAVAID site. Other freqs at controlling FSS may be available determined by altitude and terrain. Consult Airport/Facility Directory for complete information.

AIRPORT TRAFFIC SERVICE AND AIRSPACE INFORMATION

AIRSPACE INFORMATION

Part-time surface area effective during the specified days and times established in advance by a Notice to Airmen. The effective days and times will be published in the Airport/Facility Directory, in a Special Notice, or may be displayed by Notam. When no effective days and times are specified, the area is continuously effective. Consult the Airport/Facility Directory.

Class B Airspace (Formerly Terminal Control Area)

Class C Airspace (Formerly Airport Traffic Area)

Class D Airspace (Formerly Control Zone)

Class E Airspace

MOA Military Operations Area

TRSA Terminal Radar Service Area

National Security Area

MTR Military Training Routes

180° → V 3 — Low Altitude Federal Airways are indicated by center line.

Transition Area

The limits of controlled airspace are shown by tint boards (Vignette) and are not coded in blue and magenta.

Floor 700 feet above surface

Floor 1200 feet above surface

2000 — Floors other than 700 or 1200 feet above surface

2000 MSL

Prohibited, Restricted, Warning and Alert Area

MOA Military Operations Area

Control Zone

Extension to Control Area

Extension to Transition Area

Airport Traffic Area

Part-time Special Use Airspace

Special Air Traffic Rules (see F.A.R. Part 93 for details)

OBSTRUCTIONS

1000 ft and higher AGL

below 1000 ft AGL

Obstruction with no marking light. Will not operate at night.

Obstruction with no marking light. Will operate at night when visibility is less than 3 miles.

2049 — Elevation of the top above mean sea level

1149 — Height above ground. Under construction or reported, position and elevation unverified.

CAUTION: Pay extra attention to extra obstructions in this area.

MISCELLANEOUS

Isogonic Line (1980 epoch)

Obstruction

Flashing light

Intermittent light

Marine light

TOPOGRAPHICAL INFORMATION

Roads

Road Markers

Railroad

Bridges And Viaducts

Power Transmission Lines

Aerial Cable

Airport Tower (17.5m ft. minimum AGL) Other Than Tower Or Tower

CG Coast Guard Station

Rock Tower

Tank, water, jet or gas

Oil Well

Water Well

Mine or Quarry

Mountain Pass

11823 Elevation of Pass

Distance Between Peaks

Peak

Pinnacle

Rocks

Sand Area

Lava

Glacier

Perennial Lake

Intermittent Lake

Dams

Features normally used as check points for controlling VFR traffic are emphasized on this series of charts so they may be readily identified.

Example ✦ POWER PLANT

The name shown is that used by the controlling personnel and is not necessarily the official name of the feature.

CAUTION: This chart primarily designed for VFR navigational purposes and does not purport to indicate the presence of all telephone, telegraph etc., power transmission lines, terrain or obstacles which may be encountered below reasonable and safe altitudes.

Enter time in UTC. Add 1 hour for Standard Time, 2 hours for Daylight Time. Subtract the Central Standard Time Zone +6 hours for UTC.

CONVERSION OF ELEVATIONS

FEET (Thousands) 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

METERS (Thousands) 0 1 2 3 4 5 6 7 8 9

ATTENTION

THIS CHART CONTAINS MAXIMUM ELEVATION FIGURES (MEF) The Maximum Elevation Figures shown in quadrangles bounded by ticked lines of latitude and longitude are represented in THOUSANDS and HUNDREDS of feet above mean sea level. The MEF is based on information available concerning the highest known feature in each quadrangle, including terrain and obstructions (trees, towers, antennas, etc.).

Example, 12,500 feet 125

NOTICE TO USERS OF THIS CHART

You are urgently requested to inform us of corrections and additions that come to your attention while using this chart. Postage-paid Chart Correction Cards are available at authorized chart sales agents and at FAA Flight Service Stations. Where delineation of data is required, such information should be indicated clearly and accurately on a current chart (a replacement copy will be returned). Mail to: National Ocean Service, NOAA, N/CG33, 6010 Executive Blvd., Rockville, MD 20852 or call toll-free 800-626-3677.

MODE C 30 NM

CONTACT HOUSTON RADAR ON 119.7 OR 396.0

CONTACT HOUSTON RADAR ON 123.8 OR 290.2

ARRIVING VFR AIRCRAFT SHOULD CONTACT APPROACH CONTROL WITHIN 20 NM ON 123.8 257.1

ARRIVING VFR AIRCRAFT SHOULD CONTACT APPROACH CONTROL WITHIN 20 NM ON 119.7 396.0

ARRIVING VFR AIRCRAFT SHOULD CONTACT APPROACH CONTROL WITHIN 20 NM ON 120.8 284.9

ALERT AREA A-381 HIGH VOLUME OF HELICOPTER AND SEAPLANE TRAFFIC

NOTICE ALERT AREA DOES NOT EXIST WITHIN CONTROL ZONES

HOUSTON

GULF OF MEXICO

CONTIGUOUS U.S. ADIZ

VFR TERMINAL AREA CHART

HOUSTON

SCALE 1:250,000

Lambert Conformal Conic Projection Standard Parallels 33° and 45°

Topographic data corrected to April 1989

32ND EDITION: July 27, 1989

Includes airspace amendments effective July 27, 1989 and all other aeronautical data received by June 1, 1989.

Consult appropriate NOTAMs and Flight Information Publications for supplemental data and current information.

This chart will become OBSOLETE FOR USE IN NAVIGATION upon publication of the next edition scheduled for: FEBRUARY 8, 1990

HOUSTON TERMINAL CONTROL AREA

70/30 — Ceiling of TCA in hundreds of feet MSL / Floor of TCA in hundreds of feet MSL

FLIGHT IS ACCORDANCE WITH AGREEMENT BY AND BETWEEN CONTROL OF AIRCRAFT AND ASSOCIATED PROCEDURES BY DEPARTMENT OF DEFENSE + FEDERAL AVIATION ADMINISTRATION + DEPARTMENT OF COMMERCE

GROUND ELEVATIONS 445 Sea Level CONTOUR INTERVAL 100 and 200

REGULATIONS REGARDING FLIGHTS OVER CHARTED NATIONAL PARK SERVICE AREAS, U.S. FISH AND WILDLIFE SERVICE AREAS, AND U.S. FOREST SERVICE AREAS

The landing of aircraft is prohibited on lands or waters administered by the National Park Service, U.S. Fish and Wildlife Service, or U.S. Forest Service without authorization from the respective Service. Exceptions include: (1) when forced to land due to an emergency beyond the control of the operator; 2) at officially designated landing sites; 3) on paperwork official business of the Federal Government.

Except in designated areas, flights are prohibited below an altitude of 2,000 feet above the surface of the following National Parks, Monuments, Seashores, Lakeshores, Recreation Areas and Scenic Riverways administered by the National Park Service, National Wildlife Refuges, Big Game Refuges, Game Ranges and Wildlife Ranges, administered by the U.S. Fish and Wildlife Service, and Wilderness and Primitive areas administered by the U.S. Forest Service. FAA Advisory Circular AC 91-36D, "Visual Flight Rules (VFR) Flight Near Noise-Sensitive Areas," defines noise-sensitive areas, the highest terrain within 2,000 feet laterally of the route of flight, or the upper most rim of a canyon or valley.

Hunting regulations also prohibit landings by parachute or other means of persons, cargo or objects from aircraft not owned or authorized by the three agencies listed above. Exceptions include emergency cases involving the safety of human life or of threat of serious property loss.

Boundaries of National Park Service areas, U.S. Fish and Wildlife Service areas, and U.S. Forest Service Wilderness and Primitive areas.

C 55.416/11:

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National Ocean Survey

CONTROL TOWER FREQUENCIES ON HOUSTON TERMINAL AREA CHART

Airport control tower frequencies are indicated on the chart by the letters CT followed by the primary VHF (line-of-sight) frequency. Standby (emergency) frequencies for each control tower are indicated in the adjoining airport file box or medium-density airport table. Frequencies in UHF (air-carrier) and the primary VHF (low and high) and military frequencies are listed in the adjoining airport file box or medium-density airport table. An asterisk (*) follows the part time tower frequency denoted in the associated full time FSS frequency box. Tower frequencies are shown in blue and magenta. Flight Service Station (FSS) frequencies are provided if different from tower. The Automatic Terminal Information Service (ATIS) frequencies, shown on the face of the chart are normally continuous broadcasts of airport information. ATIS frequencies available are indicated below.

ASR - Airport Surveillance Radar Instrument Approach available.

CONTROL TOWER	RADIO CALL	OPERATES	ATIS	FREQ	ASR PAR
ELLINGTON	ELLINGTON	CONTINUOUS	128.4	257.8	255.5
HOBBY	HOBBY	CONTINUOUS	124.0	257.8	256.9
HOOKS MEM	HOOKS	0600-2200	124.95	118.4	393.1
HOUSTON INTCNTL	HOUSTON	CONTINUOUS	124.15	118.1	257.8

ARSA, TRSA AND SELECTED RADAR APPROACH CONTROL FREQUENCIES

HOUSTON-HOBBY ARSA 120.8 284.9 (SOUTH)
269.1 (NORTH AND EAST)
128.2 257.8 (WEST)

SPECIAL USE AIRSPACE ON HOUSTON TERMINAL AREA CHART

Controlling Agency — Houston ARTCC

Using Agency — Various military aircraft

Operating Hours — As scheduled by NOTAM

Altitudes — Surface to unlimited

Effective Dates — As scheduled by NOTAM

Times Are Subject To Change — Yes

Contact Agency For Information — Houston ARTCC

Activity — Air combat training

Hours Are Estimated — Yes

Remarks — Aircraft operate at varying speeds in all directions

NOTAMs Are Issued For — Entire area, including transit

NOTAMs Are Issued By — Houston ARTCC

Pilots Are Required To Monitor — Houston ARTCC

Pilots Are Required To Contact — Houston ARTCC

Pilots Are Advised To Contact — Houston ARTCC

Pilots Are Required To Have — Two-way radio communications

Pilots Are Advised To Have — Two-way radio communications

NO A/G - No air to ground communications

U.S. P PROHIBITED R RESTRICTED A ALERT W WARNING MOA MILITARY OPERATIONS AREA

NUMBER	LOCATION	ALTITUDE	TIME OF USE	CONTROLLING AGENCY
A-381	GULF COAST	TO 2000	DLY DAYLIGHT HOURS	

MILITARY TRAINING ROUTES (MTR)

All IR and VR MTRs are shown, and may extend from the surface upwards. Only the route centerline, direction of flight along the route and the route designator are depicted — route widths and altitudes are not shown.

Since these routes are subject to change every 56 days, and the charts are reissued every 6 months, you are cautioned and advised to contact the nearest FSS for route dimensions and current status for those routes effecting your flight.

Routes with a change in the alignment of the charted route centerline will be indicated in the Aeronautical Chart Bulletin of the Airport/Facility Directory. Also, the VFR Wall Planning Chart is issued every 56 days and displays current route configurations and a composite tabulation of altitudes along these routes.

Military Pilots refer to Area Planning AP-1B Military Training Route North and South America for current routes.

HOUSTON

CHARTED VFR FLYWAY PLANNING CHART

SCALE 1:250,000

NOT TO BE USED FOR NAVIGATION

LEGEND

PUBLIC USE AIRPORTS

Paved Runways — HOUSTON SOUTHWEST

Unpaved Runways — SKYWAY MANOR

NAVIGATIONAL AIDS

Vortac — EFD 111.0

VOR/DME — HUB 117.6

Non-Directional Radio Beacon — DWH 521

RESTRICTED AND WARNING AREAS

W-153

CONTROL ZONE

TERMINAL CONTROL AREA (TCA)

TCA BOUNDARY

AIRPORT RADAR SERVICE AREA (ARSA)

ARSA BOUNDARY

70 — CEILING IN HUNDREDS OF FEET MSL

40 — FLOOR IN HUNDREDS OF FEET MSL

MODE C (see F.A.R. 91.24/AIM)

SUGGESTED VFR FLYWAY AND ALTITUDE

1500 | 7500

IFR DEPARTURE ROUTES

IFR ARRIVAL ROUTES

HOUSTON TERMINAL CONTROL AREA (TCA)

OPERATING RULES AND PILOT EQUIPMENT REQUIREMENTS: Regardless of weather conditions, an ATC authorization is required prior to operating within a TCA. Pilots should not request an authorization to operate within a TCA unless the requirements of FAR 91.24 and FAR 91.90 are met. Included among these requirements are:

1. Unless otherwise authorized by ATC, an operable two way radio capable of communicating with ATC on appropriate frequencies for that terminal control area.
2. No person may take off or land a civil aircraft at an airport within a TCA or operate a civil aircraft within a terminal control area unless:
   a. The pilot in command holds at least a private pilot certificate, or
   b. The aircraft is operated by a student pilot who has met the requirements of FAR 61.95.
3. Unless otherwise authorized by ATC, each person operating a large turbine engine-powered airplane to or from a primary airport shall operate at or above the designated floors while within the lateral limits of the TCA.
4. An operable VOR or TACAN receiver (except for helicopters).
5. A 4096 code transponder with automatic altitude reporting equipment.

NOTE - ATC may upon application, immediately authorize a deviation from the altitude reporting equipment requirement. However, request for a deviation from the 4096 transponder equipment requirement must be submitted to the controlling ATC facility at least one hour before the proposed operation.

FLIGHT PROCEDURES:

IFR FLIGHT - Aircraft operating within the Houston TCA must be operated in accordance with ATC clearances and instructions.

VFR FLIGHT:

1. Pilots desiring to operate should contact Houston Approach Control on the specified frequencies and in relation to geographical or radio fixes shown on the chart as flagged check points. Although pilotage aircraft may be operating beneath the floor of the TCA on initial contact, communications should be established with Approach Control in relation to the points indicated for sequencing and spacing purposes.
2. Aircraft departing the primary airport are requested to advise Clearance Delivery prior to taxiing of their intended altitude and direction of flight to depart the TCA. Aircraft departing from other than Houston-Intercontinental Airport whose route of flight would penetrate the TCA should give this information to ATC on appropriate frequencies.
3. Aircraft desiring to transit the TCA may obtain an ATC clearance and will be handled on an equitable first come, first served basis.

ATC PROCEDURES:

All aircraft will be controlled and separated while operating within the TCA, except helicopters need not be separated from other helicopters. Although radar separation will be the primary standard used, approved visual and other nonradar procedures will be applied as required or deemed appropriate. Traffic information on observed but unidentified radar targets will be provided on a workload permitting basis to aircraft operating outside of the TCA.

NOTE - Assignment of radar headings and/or altitudes are based on the provision that a pilot operating in accordance with visual flight rules is expected to advise ATC if compliance with an assigned route, radar heading or altitude will cause the pilot to violate such rules.

THIS CHART IDENTIFIES VFR FLYWAYS DESIGNED TO HELP VFR PILOTS AVOID MAJOR CONTROLLED TRAFFIC FLOWS. IT DEPICTS MULTIPLE VFR ROUTINGS THROUGHOUT THE HOUSTON AREA WHICH MAY BE USED AS ALTERNATES TO FLIGHT WITHIN THE ESTABLISHED TCA/ARSA. ITS GROUND REFERENCES PROVIDES A GUIDE FOR IMPROVED VISUAL NAVIGATION. THIS IS NOT INTENDED TO DISCOURAGE REQUESTS FOR VFR OPERATIONS WITHIN THE TCA/ARSA BUT IS DESIGNED SOLELY FOR INFORMATION AND PLANNING PURPOSES.

Features normally used on check points for controlling VFR traffic are emphasized on this series of charts so they may be readily identified.

Example — MAGNOLIA

The name shown is that used by the controlling personnel and is not necessarily the official name of the feature.

CAUTION

THE ENTIRE AREA SURROUNDING HOUSTON IS HEAVILY CONGESTED WITH MANY TYPES OF AIRCRAFT. THE ROUTE SUGGESTIONS ARE NOT STERILE OF OTHER AIRCRAFT; THEY ARE AREAS WE BELIEVE TO BE LEAST CONGESTED IN AN AREA OF HEAVY CONGESTION. PILOT ADHERENCE TO VISUAL FLIGHT RULES MUST BE EXERCISED AT ALL TIMES.